

**AMENDMENTS TO THE DRAWINGS**

Figures 23, 24, 25(a) and 25(b) have been amended to include the designation “Related Art.”

Enclosures: 3 Replacement Sheets

**REMARKS**

Applicant thanks the Examiner for considering the references cited with the Information Disclosure Statements filed July 19, 2005, February 7, 2006, March 22, 2007, June 29, 2007 and September 13, 2007.

Applicant also thanks the Examiner for acknowledging the claim for priority under 35 U.S.C. § 119 and receipt of a certified copy of the priority document.

**Objections to the Drawings**

The Examiner has objected to the drawings because Figure 24 allegedly illustrates only that which is old and therefore requires a legend such as "Prior Art."

The Examiner has also alleges that figures 17(a) and (b), 18(a) and (b), 19(a) and (b), and 20(a) and (b) are not shown in the drawings but described in the specification.

Applicant has amended Figure 24, as well as Figures 23, 25(a) and 25(b) to include the designation "Related Art." Applicant has also amended the specification to eliminate references to figures 17(a) and (b), 18(a) and (b), 19(a) and (b), and 20(a) and (b).

Applicant respectfully requests that the objections to the drawings be withdrawn.

**Objections to the Claims**

The Examiner objects to claim 19 alleging that the phrase "said negative resistance *are* comprised of" should be written as "said negative resistance *is* comprised of".

Applicant respectfully submits that the phrase "*are* comprised of" is correct since the phrase refers to "*said active device* carrying out voltage-current conversion *and said active device* comprising said negative resistance device" (*emphasis added*). Accordingly, no correction of claim 19 is necessary.

Claim 20 has also been objected to because the Examiner alleges that the phrase "A filtering circuit including a combination circuit comprised of *the* voltage-current converting circuit" should read "A filtering circuit including a combination circuit comprised of *a* voltage-current converting circuit."

Applicant has amended claim 20 as suggested by the Examiner.

Applicant respectfully requests that the objections to claims 19 and 20 be withdrawn.

### **Claim Rejections**

#### **Claims 1, 4, 5 and 6 --- 35 U.S.C. § 112**

Claims 1, 4, 5 and 6 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Applicant has amended claims 4-6 to eliminate the recitation of the phrase "or each of said resistor circuits" alleged to be indefinite by the Examiner. Further, claim 6 has been amended to recite "*said* negative resistance" in place of "*a* negative resistance."

Applicant submits that claims 4-6 are now consistent with claim 1 and respectfully requests that this rejection be withdrawn.

#### **Claims 1-3, 5, 7-9, 12, 13, 18 and 19 --- 35 U.S.C. § 102(b)**

Claims 1-3, 5, 7-9, 12, 13, 18 and 19 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Pat. No. 6,100,758 to Klemmer ("Klemmer"). Applicant traverses this rejection.

Addressing claim 1, Klemmer does not disclose or suggest at least an active device having an input terminal, an output terminal, and a grounded terminal, and carrying out voltage-current conversion, as recited in the claim. As alleged by the Examiner, figure 4 of Klemmer teaches an active device 38 having an input terminal at the gates of Q'3 and Q'4, an output

terminal at the drains of Q'3 and Q'4 and a grounded terminal at the sources of Q'3 and Q'4 which inherently carries out a voltage-current conversion based on its structure (see Office Action, page 4).

However, as disclosed by Klemmer with reference to figure 3 which is the bipolar junction transistor version of the circuit, the current collector 38 (38') has a reference voltage source  $V_{ref}$  applied to the bases of transistors Q3 and Q4 (gates of Q'3 and Q'4) (column 5, lines 4-6). The *emitters of Q3 and Q4 (sources of Q'3 and Q'4) correspond to the input terminals* of the current collector 38 and the *collectors of Q3 and Q4 (drains of Q'3 and Q'4) correspond to the output terminals* of the current collector 38 (column 5, lines 6-11). Therefore, as disclosed by the specification, the sources of Q'3 and Q'4 are not the grounded terminals, nor are the gates of Q'3 and Q'4 the input terminals of the current collector 38', which is contrary to the Examiner's allegation.

Further, as can be seen in Fig. 4, both the input at the sources of Q'3 and Q'4 and output signals at the drains of Q'3 and Q'4 of the current collector 38 are current signals. The voltage  $V_{ref}$  is merely a bias voltage and is not converted into a current. Thus, current collector 38 does not carry out voltage-current conversion based on its structure, as alleged by the Examiner.

Additionally, the Examiner alleges that sub circuit 32' comprises a variable resistance, including a negative resistance, by virtue of the cross coupled transistors Q'1 and Q'2. Applicant notes, however, that Klemmer discloses a typical differential amplifier including transistors Q1 and Q2 and a current source IEE (column 4, lines 58-60). Thus, Klemmer merely discloses a differential amplifier structure, and one of ordinary skill in the art would not look to a differential amplifier structure to provide a variable resistance including a negative resistance, as claimed by Applicant.

In view of the above, Klemmer does not disclose or suggest at least an active device having an input terminal, an output terminal, and a grounded terminal, and carrying out voltage-current conversion, and a resistor circuit electrically connected in series to said active device through said grounded terminal of said active device, said resistor circuit having a variable resistance, and including a negative resistance device, as recited in claim. Therefore, Klemmer does not anticipate claim 1.

Accordingly, claim 1 is patentable over Klemmer. Claims 2, 3, 5, 7-9, 12, 13, 18 and 19 are patentable at least by virtue of their dependence.

**Claim 20 --- 35 U.S.C. § 103(a)**

Claim 20 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Klemmer. Applicant traverses this rejection.

Claim 20 contains features similar to the features recited in claim 1 and is therefore patentable for reasons similar to the reasons set forth above for the patentability of claim 1.

**Allowable Subject Matter**

Applicant thanks the Examiner for the indication that claims 4, 6, 10, 11 and 14-17 contain allowable subject matter and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant respectfully submits that claims 4, 6, 10, 11 and 14-17 are patentable at least by virtue of their dependence from claim 1.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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